

TRANSISTOR STRUCTURE HAVING REDUCED TRANSISTOR LEAKAGE  
ATTRIBUTES

Abstract of the Disclosure

5           Undesirable transistor leakage in transistor structures becomes greatly reduced  
in substrates having a doped implant region formed via pulling back first and second  
layers of a process stack. A portion of the substrate, which also has first and second  
layers deposited thereon, defines the process stack. The dopant is selected having the  
same n- or p- typing as the substrate. Through etching, the first and second layers of  
10   the process stack become pulled back from a trench wall of the substrate to form the  
implant region. Occupation of the implant region by the dopant prevents undesirable  
transistor leakage because the electrical characteristics of the implant region are so  
significantly changed, in comparison to central areas of the substrate underneath the  
first layer, that the threshold voltage of the implant region is raised to be about  
15   equivalent to or greater than the substantially uniform threshold voltage in the central  
area.

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